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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,855	03/05/2002	Man-Ho Jae	SEC.884	8369

7590 05/21/2004
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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,855	Applicant(s) JAE ET AL.	
	Examiner Sylvia R MacArthur	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/5/2002</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 6-18 filed 4/28/2004 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 6-12, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Chopra et al (US 6,736,926).

Regarding claim 6: Chopra et al teaches a system of cleaning a CMP pad the system comprises a polishing station 200 with a polishing pad 201 mounted to the polishing station, a washing device 322 disposed at one side of the polishing pad. The polishing device has a plate defining at least one feed hole to form at least one free flowing vertical stream that impinges the upper surface of the polishing pad, see Fig. 4A.

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Regarding claim 7: Chopra teaches a carrier head with a vacuum chuck, the carrier head is disposed above the polishing station and is vertically moveable so that a substrate grasped by the carrier head can be lowered into contact with the polishing pad, see col. 5 lines 4-10.

Regarding claim 8: A rotary member (shaft 208 by motor) is connected to the carrier head making the carrier head rotate, see col.5 lines 4-6.

Regarding claim 9: A rotary member (shaft 203 attached to a motor) is connected to the polishing pad making the polishing pad to rotate.

Regarding claim 10: A slurry dispenser (provided by tube 204) dispenses slurry onto the polishing pad.

Regarding claim 11: The slurry dispenser has an outlet at the distal end of the washing device closest to the center of the polishing pad, Fig. 1.

Regarding claim 12: The slurry dispenser includes a slurry outlet disposed at an outer peripheral portion of the polishing pad, see Fig.1.

Regarding claim 17: The washing device has a washing liquid outlet connected to a source of washing solution, disposed at the distal end closest to the center of the polishing pad see 4A.

Regarding claim 18: The type of washing solution used is a matter of an intended use. The apparatus of Chopra is capable of utilizing the washing solution.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chopra et al.

Regarding claim 13: Chopra fails to teach a washing device with more than six of feed holes.

Chopra illustrates four holes in Fig. 4A. Nevertheless, the number of holes is an optimizable parameter. The motivation to provide a washing device with more than six holes promote a more desirable washing result.

Thus, it would have obvious for one of ordinary skill in the art at the time of the claimed invention to provide a washing device with more than six of feed holes.

Regarding claim 14: Chopra fails to a feed hole with a diameter of about 1.5 to 2.5mm. The modification of the feed holes of Chopra to meet the dimensions of claim 14 are held to have been obvious by In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). Therein the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. Additionally, the dimensions of the feed holes are an optimizable parameter.

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The motivation to provide the feed holes of Chopra with feed holes with a diameter of 1.5 to 2.5 mm is that this size is optimal for the desired washing result.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a diameter of about 1.5 to 2.5mm.

Regarding claim 15: Chopra fails to teach a feed hole at a height of about 20 to 40 mm above the upper surface of the polishing pad.

The modification of the feed holes of Chopra to meet the dimensions of claim 15 are held to have been obvious by *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). Therein the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. Additionally, the dimensions of the feed holes are an optimizable parameter.

The motivation to provide the feed holes of Chopra with feed holes with a height of 20 to 40 mm is that this size is optimal for the desired washing result.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a height of about 20 to 40 mm.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chopra et al in view of Tolles et al (US 6,051,499).

The teachings of Chopra were discussed above.

Chopra fails to teach or fairly suggest that the washing device is held by a screw.

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Tolles et al illustrates a screw in Figures 7 and 8.

The motivation to provide a screw in the apparatus is to mechanically secure the washing device to the polishing station.


Thus, it would have been obvious for one of ordinary skill in the art at the time of -the claimed invention to provide a screw.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R MacArthur
Patent Examiner
Art Unit 1763

May 19, 2004